

中国西部地区鹅观草属新植物*

蔡联炳

(中国科学院西北高原生物研究所, 西宁 810001)

NEW TAXA OF THE GENUS *ROEGNERIA* (POACEAE) FROM WEST CHINA

Cai Lian-bing

(Northwest Plateau Institute of Biology, Chinese Academy of Sciences, Xining 810001)

Key words *Roegneria*; *R. debilis*; *R. gracilis*; *R. flexuosa*; *R. crassa*; *R. angusta*; *R. cheniae*

关键词 鹅观草属; 柔弱鹅观草; 纤瘦鹅观草; 弯曲鹅观草; 粗状鹅观草; 狭穗鹅观草; 陈氏鹅观草

1 柔弱鹅观草 新种 图 1:1~8

Roegneria debilis L. B. Cai, sp. nov.

Species nova affinis *R. calcicolae* Keng, sed spicis leviter brevioribus, spiculis circ. 9 mm longis, glumis breviter aristatis margine non membranaceis, aristis lemmatum (5) 7~10 mm longis, paleis apice truncatis, antheris circ. 1 mm longis bene differt.

Herba perennis, rhizomate saepe descendente. Culmi debiles, solitarii, scaberuli, 50~60 cm alti, 1~2 mm diam., 5~7-nodes, nodo pubescenti. Vaginae foliorum glabrae, basales internodiis manifeste longiores; ligulae apice truncatae, circ. 0.3 mm longae; laminae complanatae, 7~15 cm longae, 3~5 mm latae, superne scabrae vel sparsim villosae, inferne saepe glabrae. Spica leviter arcuata vel pendula, 6~11 cm longa, 5~7 mm lata; rhachis tenuis, secus acies breviter spinosa; internodiis generatim 4~5 mm longis, nodis 2~6 inferis pleraque spiculas obsoletas gerentibus; spiculae virides, circ. 9 mm longae (aristis exclusis), 2~3-florae; glumae anguste lanceolatae, 2~3-nerves, scabrae vel secus nervos sparsim spinulosae, duae subaequales vel ea prima leviter brevior, 2.5~4 mm longae, apice aristatae, aristis 1.5~3 mm longis; lemmata lanceolata, dorso scabra vel sparsim spinulosa, 5-nervia, id primum 7~8 mm longum, apice aristatum, arista infirma leviter flexa 7~10 mm longa; paleae lemmatibus saepe longiores, apice truncatae, ad carinas duas spinulosae, inter carinas scabrosae; antherae flavae, circ. 1 mm longae. Caryopsis oblonga, apice pubens.

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Gansu (甘肃): Sunan (肃南), in sylvis, alt. 2350 m, 1991-07-29, T. N. He (何廷农) 2939 (holotypus, HNWP). **Qinghai**. (青海): Tongde (同德), alt. 3400 m, 1990-08-05, Y. H. Wu *et al.* (吴玉虎等) 5860.

多年生禾草, 常具下伸根茎。秆柔弱, 单生, 微粗糙, 高 50~60 cm, 径 1~2 mm, 具 5~7 节, 节上被短柔毛。叶鞘无毛, 下部者明显长于节间; 叶舌先端平截, 长约 0.3 mm; 叶片扁平, 长 7~15 cm, 宽 3~5 mm, 上面粗糙或疏生长柔毛, 下面通常无毛。穗状花序微弯或下垂, 长 6~11 cm, 宽 5~7 mm; 穗轴细弱, 边缘具短刺毛, 节间一般长 4~5 mm, 基部 2~6 节小穗常退化; 小穗绿色, 长约 9 mm (芒除外), 含 2~3 小花; 颖狭披针形, 2~3 脉, 粗糙或脉上具短刺毛, 两颖近相等或第一颖稍短, 长 2.5~4 mm, 先端具 1.5~3 mm 长的短芒; 外稃披针形, 背面粗糙或疏生小刺毛, 具 5 脉, 第一外稃长 7~8 mm, 先端芒细弱, 微弯, 长 7~10 mm; 内稃通常长于外稃, 先端平截, 脊上具短刺毛, 脊间粗糙; 花药黄色, 长约 1 mm。颖果矩圆形, 先端具茸毛。

本种与钙生鹅观草 *R. calcicola* Keng 相近, 但穗状花序稍短; 小穗长约 9 mm; 颖具短芒, 边缘非膜质; 外稃芒长(5) 7~10 mm; 内稃先端平截; 花药长约 1 mm 而明显区别。

2 纤瘦鹅观草 新种 图 1:9~15

Roegneria gracilis L. B. Cai, sp. nov.

Haec species *R. parviglumae* Keng proxima, a qua differt spiculis angustis parvis 12~16 mm longis (aristis exclusis) 3~4-flocculis, aristis lemmatum 6~8 mm longis, antheris brevibus circ. 1 mm longis, plantis gracilibus, laminis 2~6 cm longis.

Herba perennis, rhizomate saepe brevior. Culmi erecti, solitarii, scabridiusculi, circ. 70 cm alti, 1.2~2 mm diam., 3~4-nodes. Vaginae foliorum glabrae, internodiis saepissime breviores; ligulae truncatae, brevissimae; laminae complanatae vel margine involutae, 2~6 cm longae, 2~3 mm latae, superne scabrae vel simul sparsim pubescentes, inferne saepe glabrae. Spica laxa, leviter pendula, purpurascens, 10~12 cm longa; rhachis tenuis, serpentina, secus acies sparsim spinulosa, internodiis generatim 5~12 mm longis; spiculae angustae, parvae, 12~16 mm longae (aristis exclusis), 3~4-florae, rhachillae articulis 2~2.5 mm longis, minute puberulis; glumae lanceolatae, saepe 3-nerves, ad nervos scabrae, apice acuminatae, gluma prima 2~3 mm secunda 4~5 mm longa; lemmata anguste lanceolata, evidenter 5-nervia, superne et margine sparsim spinulosa, id primum 8~10 mm longum, apice aristatum, arista 6~8 mm longa; paleae lemmata aequantes, vel eis leviter breviores, apice hebetatae vel truncatae, ad carinas duas breviter spinosae, inter carinas glabrae; antherae flavae, circ. 1 mm longae; ovaria obovata, apice pubentia.

Xizang (西藏): Gongbo'gyamda (工布江达), ad ripas fluviorum, alt. 3970 m, 1988-09-21, J. L. Yang *et al.* (杨俊良等) 880788 (holotypus, SAUT).

多年生, 常具短根茎。秆直立, 单生, 稍粗糙, 高约 70 cm, 径 1.2~2 mm, 具 3~4 节。叶鞘无毛, 通常短于节间; 叶舌平截, 极短; 叶片扁平或边缘内卷, 长 2~6 cm, 宽 2~3 mm, 上面粗糙或伴生疏短柔毛, 下面通常光滑无毛。穗状花序疏松, 略下垂, 显紫色, 长

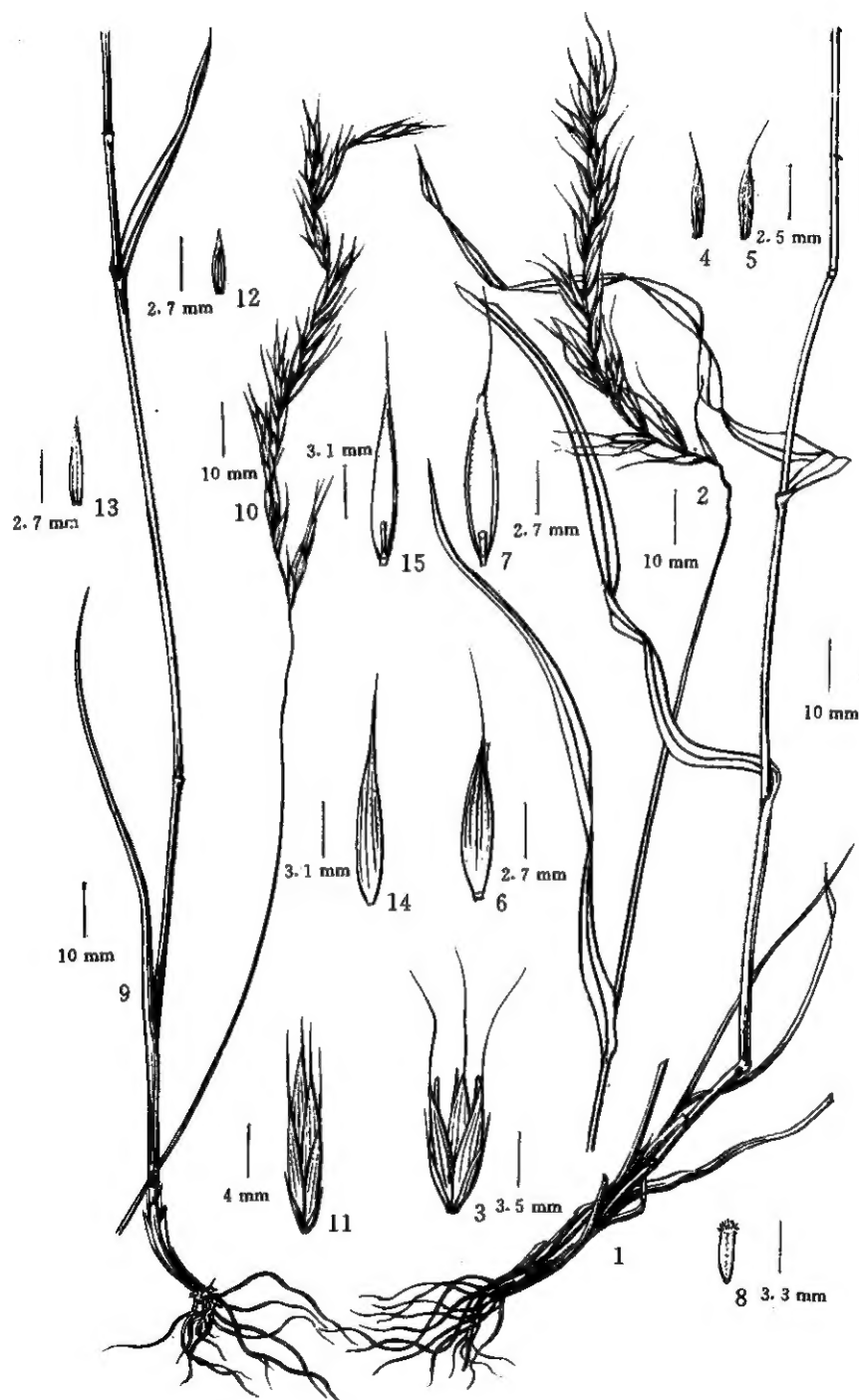


图 1 1~8. 柔弱鹅观草; 9~15. 纤瘦鹅观草。1, 9. 植株下部; 2, 10. 花序; 3, 11. 小穗; 4, 12. 第一颖片; 5, 13. 第二颖片; 6, 14. 第一小花背面; 7, 15. 第一小花腹面; 8. 颖果。(王颖绘)

Fig. 1 1~8. *Roegneria debilis*; 9~15. *Roegneria gracilis*. 1, 9. basal portion of plant; 2, 10. spike; 3, 11. spikelet; 4, 12. first glume; 5, 13. second glume; 6, 14. dorsal view of the first floret; 7, 15. ventral view of the first floret; 8. caryopsis.

10~12 cm;穗轴纤细,蜿蜒,边缘疏生刺毛,节间一般长5~12 mm;小穗狭小,长12~16 mm(芒除外),含3~4小花,小穗轴节间长2~2.5 mm,被微小短毛;颖披针形,通常具3脉,脉上粗糙,先端渐尖,第一颖长2~3 mm,第二颖长4~5 mm;外稃狭披针形,明显具5脉,上部及边缘疏生小刺毛,第一外稃长8~10 mm,先端芒长6~8 mm;内稃与外稃等长或稍短,先端钝尖或平截,脊上具短刺毛,脊间无毛;花药黄色,长约1 mm;子房倒卵形,顶部具柔毛。

本种与小颖鹅观草 *R. parvigluma* Keng 相近,不同于后者在于小穗狭小,长12~16 mm(芒除外),含3~4小花;外稃芒长6~8 mm;花药短,长约1 mm;植株纤瘦;叶片长2~6 cm。

3 弯曲鹅观草 新种 图2:1~9

Roegneria flexuosa L. B. Cai, sp. nov.

Species *R. serotinae* Keng affinis, sed vaginis foliorum glabris, glumis 5~7-nervibus, glabris ea secunda aristam haud gerente, paleis inter carinas glabris bene differt.

Herba perennis, rhizomate saepe brevior. Culmi erecti, caespitosi, glabri, 30~50 cm alti, 1.5~2.5 mm diam., 3~4-nodes. Vaginae foliorum glabrae, internodiis longiores vel breviores; ligulae membranaceae, apice truncatae, circ. 1 mm longae; laminae involutae, 4~14 cm longae, 2~3 mm latae, superne scabrae vel pubescentes, inferne saepe glabrae. Spica laxa, leviter pendula, flavo-virens, 10~16 cm longa; rhachis flexuosa, apice debilis, secus acies spinulosa, internodiis generatim 12~16 mm longis; spiculae 6~7-florae, 15~20 mm longae (aristis exclusis), rhachillis saepe puberulis; glumae oblongo-lanceolatae, glabrae, 5~7-nerves, apice pungentes vel acutae, gluma prima 5~6 mm secunda 7~8 mm longa; lemmata lanceolata, dorso saepe sparse spinulosa, superne distincte 5-nervis, id primum 9~10 mm longum, apice aristatum, arista scabra, recurva, 20~25 mm longa; paleae lemmata aequantes, vel eis breviores, apice truncatae, ad carinas duas breviter spinosae, inter carinas glabrae; antherae flavae, 1.5~2 mm longae. Caryopsis apice pubens.

Gansu (甘肃): Zhangye (张掖), in clivis, alt. 1750 m, 1957-08-01, X. Z. Zhang (张学忠) 203 (holotypus, WUK). **Xinjiang** (新疆): Taxkorgan (塔什库尔干), alt. 3520 m, 1978-07-04, Northwest. Inst. Bot. Exped. Xinjiang. (西植新疆队) 916.

多年生,常具短根茎。秆直立,丛生,光滑无毛,高30~50 cm,径1.5~2.5 mm,具3~4节。叶鞘无毛,长于或短于节间;叶舌膜质,先端平截,长约1 mm;叶片内卷,长4~14 cm,宽2~3 mm,上面粗糙或被短柔毛,下面通常光滑无毛。穗状花序疏松,稍下垂,淡黄绿色,长10~16 cm;穗轴弯曲,先端柔弱,边缘具小刺毛,节间一般长12~16 mm;小穗含6~7小花,长15~20 mm(芒除外),小穗轴通常被微毛;颖长圆状披针形,无毛,5~7脉,先端锐尖或急尖,第一颖长5~6 mm,第二颖长7~8 mm;外稃披针形,背面通常疏生小刺毛,上部明显具5脉,第一外稃长9~10 mm,先端芒糙涩、反曲,长20~25 mm;内稃等于或稍短于外稃,先端平截,脊上具短刺毛,脊间无毛;花药黄色,长1.5~2 mm。颖果先端具茸毛。



图2 1~9. 弯曲鹅观草; 10~16. 粗状鹅观草。1, 10. 植株下部; 2, 11. 花序; 3, 12. 小穗; 4, 13. 第一颖片; 5, 14. 第二颖片; 6, 15. 第一小花背面; 7, 16. 第一小花腹面; 8. 花药; 9. 颖果。(王颖绘)

Fig. 2 1~9. *Roegneria flexuosa*; 10~16. *Roegneria crassa*. 1, 10. basal portion of plant; 2, 11. spikelet; 3, 12. spikelet; 4, 13. first glume; 5, 14. second glume; 6, 15. dorsal view of the first floret; 7, 16. ventral view of the first floret; 8. anthers; 9. caryopsis.

本种与秋鹅观草 *R. serotina* Keng 接近,但叶鞘无毛;颖 5~7 脉,无毛,第二颖从不具短芒;内稃脊间无毛而明显不同。

4 粗壮鹅观草 新种 图 2:10~16

Roegneria crassa L. B. Cai, sp. nov.

Species *R. strictae* Keng valde similis, sed spicis crassis, rhachillis glabris, callis lemmatum hirtis, aristis earum valde recurvis, paleis inter carinas glabris, culmis 4~5-nodibus, laminis complanatis vel margine involutis bene differt.

Herba perennis, radicibus fibrosis. Culmi erecti vel basi leviter geniculati, laxe caespitosi, scaberuli, 50~90 cm alti, 2~3 mm diam., 4~5-nodes. Vaginae foliorum scabrae, praeter basales internodiis breviores; ligulae membranaceae, circ. 0.5 mm longae, apice truncatae; laminae complanatae vel margine involutae, 11~18 cm longae, 3~7 mm latae, superne scabrae vel sparsim villosae, inferne glabrae vel scabrae. Spica erecta, crassa, viridula, 14~18 cm longa, 5~6 mm lata; rhachis tenax, secus acies ciliata, internodiis vulgo 5~10 mm longis, basalibus 25 mm longis; spiculae angustae, 16~22 mm longae (aristis exclusis), 6~8-florae, rhachillis glabris; glumae oblongo-lanceolatae, dorso secus nervos scabrae, apice pungentes vel mucronatae, gluma prima 5~7 nervis, 8~9 mm longa, secunda vulgo 7-nervis, 9~10 mm longa; lemmata lanceolata, 5-nervia, dorso glabra vel superne secus nervos sparse spinulosa, callis hirtis, id primum 8~10 mm longum, apice aristatum, arista scabra, valde recurva, 15~18 mm longa; paleae lemmata subaequantes, apice emarginatae vel truncatae, superne ad carinas ciliatae, inter carinas glabrae; antherae flavae, circ. 2 mm longae. Caryopsis 5~6 mm longa, apice pubens.

Ningxia (宁夏): Yanchi (盐池), in pratis clivorum, alt. 1800 m, 1977-07-21, Z. Y. Zhang et H. J. Wang (张志英和王宏杰) 140 (holotypus, WUK). Qinghai (青海): Nangqen (囊谦), alt. 3900 m, 1978-08-02, P. C. Kuo (郭本兆) 321.

多年生,根须状。秆直立或基部微膝曲,疏丛,微粗糙,高 50~90 cm,径 2~3 mm,具 4~5 节。叶鞘粗糙,除基部者外短于节间;叶舌膜质,长约 0.5 mm,先端平截;叶片扁平或边缘内卷,长 11~18 cm,宽 3~7 mm,上面粗糙或疏生长柔毛,下面无毛或粗糙;穗状花序直立,粗厚,浅绿色,长 14~18 cm,宽 5~6 mm;穗轴坚韧,边缘具纤毛,节间一般长 5~10 mm,基部可达 25 mm;小穗窄狭,长 16~22 mm(芒除外),含 6~8 小花,小穗轴光滑无毛;颖长圆状披针形,背面脉上粗糙,先端锐尖或具小尖头,第一颖具 5~7 脉,长 8~9 mm,第二颖通常具 7 脉,长 9~10 mm;外稃披针形,具 5 脉,背部无毛或上部脉上疏生短刺毛,基盘具髯毛,第一外稃长 8~10 mm,先端芒糙涩,明显反曲,长 15~18 mm;内稃近等长于外稃,先端微凹或平截,脊上部具纤毛,脊间无毛;花药黄色,长约 2 mm;颖果长 5~6 mm,顶端具茸毛。

本种与肃草 *R. stricta* Keng 很近似,但穗状花序粗厚;小穗轴光滑无毛;外稃基盘具髯毛,先端芒明显反曲;内稃脊间无毛;秆 4~5 节;叶片扁平或边缘内卷而易于区别。

5 狭穗鹅观草 新种 图 3:1~9

Roegneria angusta L. B. Cai, sp. nov.

Affinis *R. barbicallae* Ohwi, sed spiculis angustis, glumis vulgo 3-nervibus secus nervos scabris apice mucronatis 1~2 mm longis, lemmatibus anguste lanceolatis, callis glabris vel tantum pilosis, paleis inter carinas glabris, laminis leviter brevioribus 8~15 cm longis bene differt.

Herba perennis, radicibus fibrosis tenuibus elongatis. Culmi erecti vel basi leviter geniculati, solitarii vel laxe caespitosi, glabri, 80~100 cm alti, 2~2.5 mm diam., 4-nodes. Vaginae foliorum margine ciliatae, praeter basales internodiis breviores; ligulae papyraceae, apice truncatae, 0.6 mm longae; laminae complanatae, 8~15 cm longae, 4~6 mm latae, utrinque glabrae vel superne scabrae. Spica laxa, erecta vel leviter arcuata, 16~20 cm longa, circ. 6 mm lata; rhachis dorso scabra, secus acies breviter ciliata, internodiis generatim 8~12 mm longis, ad basin rhachidis 20 mm longis; spiculae angustae, 16~26 mm longae, 4~6-florae; glumae lanceolatae, vulgo 3-nerves, secus nervos scabrae, apice mucronatae, mucronibus 1~2 mm longis duae subaequales, 8~10 mm longae; lemmata anguste lanceolata, dorso laevia, superne distincte 5-nervia, callis glabris vel tantum pilosis, id primum 10~12 mm longum, apice aristatum, arista valida scabra recta 20~25 mm longa; paleae lemmata subaequantes, apice hebetatae vel obtusae, superne ad carinas breviter ciliatae, inter carinas glabrae; antherae flavae, 2~2.7 mm longae; ovaria obconica, apice pubentia.

Qinghai (青海): Xunhua (循化), in clivis pratensibus, alt. 2200 m, 1984-07-08, G. X. Lei (雷更新) 841810 (holotypus, HNWP).

多年生,须根细长。秆直立或基部稍膝曲,单生或疏丛,无毛,高80~100 cm,径2~2.5 mm,具4节。叶鞘边缘具纤毛,除基部者外短于节间;叶舌纸质,先端平截,长约0.6 mm;叶片扁平,长8~15 cm,宽4~6 mm,两面无毛或上面粗糙。穗状花序疏松,直立或微弯,长16~20 cm,宽约6 mm;穗轴背面粗糙,边缘具短纤毛,节间一般长8~12 mm,基部可达20 mm;小穗窄狭,长16~26 mm,含4~6小花;颖披针形,通常具3脉,脉上粗糙,先端具1~2 mm长的短尖头,两颖近相等,长8~10 mm;外稃狭披针形,背面光滑,上部明显具5脉,基盘无毛或仅生稀疏短毛,第一外稃长10~12 mm,先端芒粗壮、糙涩、直伸,长20~25 mm;内稃几与外稃等长,顶端尖或钝圆,脊上部具短纤毛,脊间无毛;花药黄色,长2~2.7 mm;子房倒圆锥形,顶端具茸毛。

本种与毛盘鹅观草 *R. barbicalla* Ohwi 相近,但小穗细狭;颖通常具3脉,脉上粗糙,先端具1~2 mm长的短尖头;外稃狭披针形,基盘无毛或仅生稀疏短毛;内稃脊间无毛;叶片较短,长8~15 cm而易于区别。

6 陈氏鹅观草 新种 图 3:10~18

Roegneria cheniae L. B. Cai, sp. nov.

Similis *R. sylvaticae* Keng et S. L. Chen, sed plantis humilibus 30~60 cm altis, laminis 3~10 cm longis 2~4 mm latis, glumis glabris, lemmatibus superne distincte 5-nervibus, callis glabris vel scabrellis, paleis inter carinas glabris bene differt.

Herba perennis, radicibus fibrosis. Culmi erecti vel basi leviter geniculati, laxe caespitosi, glabri, 30~60 cm alti, 1.5~2.5 mm diam., 3~4-nodes. Vaginae foliorum glabrae,

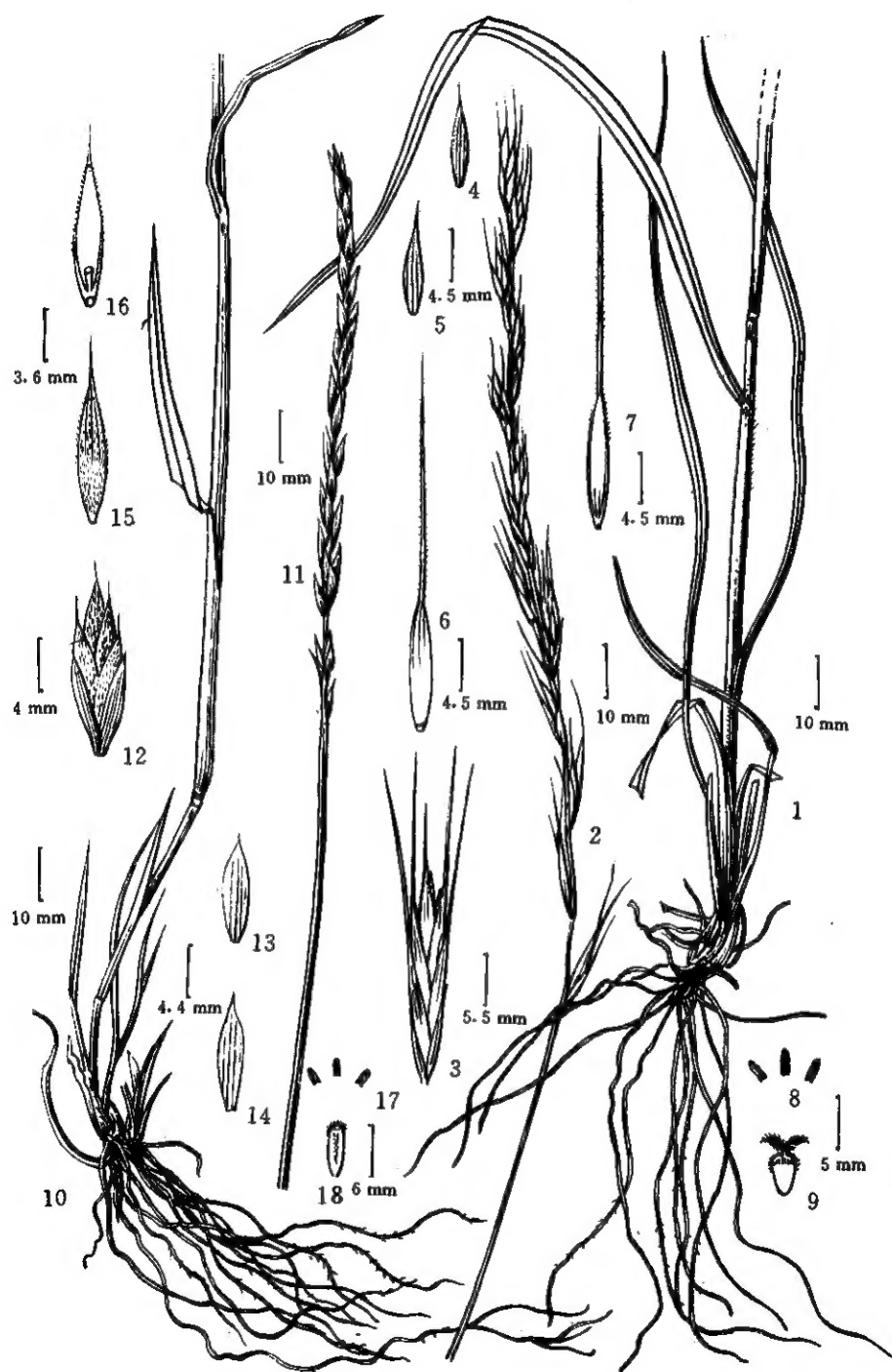


图3 1~9. 狭穗鹅观草; 10~18. 陈氏鹅观草。1, 10. 植株下部; 2, 11. 花序; 3, 12. 小穗; 4, 13. 第一颖片; 5, 14. 第二颖片; 6, 15. 第一小花背面; 7, 16. 第一小花腹面; 8, 17. 花药; 9. 雌蕊; 18. 颖果。(王颖绘)

Fig. 3 1~9. *Roegneria angusta*; 10~18. *Roegneria cheniae*. 1, 10. basal portion of plant; 2, 11. spike; 3, 12. spikelet; 4, 13. first glume; 5, 14. second glume; 6, 15. dorsal view of the first floret; 7, 16. ventral view of the first floret; 8, 17. anthers; 9. pistil; 18. caryopsis.

praeter basales internodiis breviores; ligulae membranaceae, apice truncatae, circ. 0.5 mm longae; laminae complanatae vel margine involutae, 3~10 cm longae, 2~4 mm latae, glabrae. Spica erecta, viridula vel purpurascens, 5~13 cm longa, circ. 4 mm lata; rhachis dorso glabra, secus acies scabra vel sparse breviter ciliata, internodiis vulgo 5~7 mm longis; spiculae secus rachim adnatae, 10~14 mm longae, 2~4-florae, rhachillis puberulis; glumae lanceolatae vel oblongo-lanceolatae, glabrae, 4~6-nerves, margine membranaceae, apice pungentes vel mucronatae, duae subaequales, 7~11 mm longae (mucronibus inclusis); lemmata lanceolata, dorso adpresse spinulosa, superne distincte 5-nervia, id primum 8~10 mm longum, apice arista 1~3 mm longa praeditum; paleae lemmatibus breviores vel leviter longiores, apice emarginatae vel truncatae, ad carinas duas breviter ciliatae, inter carinas glabrae; antherae flavae, 1.5~2 mm longae. Caryopsis oblonga, circ. 6 mm longa, apice pubens.

· **Xinjiang (新疆)**: Zhaosu (昭苏), inter frutices, alt. 2300 m, 1978-08-03, K. Tuo (托考) 780875 (holotypus, XJBI); Xinyuan (新源), alt. 2600 m, 1958-08-11, Exped. Xinjiang (新疆队) 6493.

多年生,根须状。秆直立或基部稍膝曲,疏丛,光滑,高30~60 cm,径1.5~2.5 mm,具3~4节。叶鞘无毛。除基部者外短于节间;叶舌膜质,先端平截,长约0.5 mm;叶片扁平或边缘内卷,长3~10 cm,宽2~4 mm,两面均光滑无毛。穗状花序直立,浅绿色或微带紫色,长5~13 cm,宽约4 mm;穗轴背部无毛,边缘粗糙或疏生短纤毛,节间一般长5~7 mm;小穗贴生,长10~14 mm,含2~4小花,小穗轴被微毛;颖披针形或长圆状披针形,无毛,4~6脉,边缘膜质,先端锐尖或具短尖头,两颖近相等,长7~11 mm(连尖头);外稃披针形,背部贴生刺毛,上部明显具5脉,第一外稃长8~10 mm,先端具1~3 mm长的短芒;内稃短于或稍长于外稃,先端微凹或平截,脊上具短纤毛,脊间无毛;花药黄色,长1.5~2 mm。颖果矩圆形,长约6 mm,顶端具茸毛。

本种与林地鹅观草 *R. sylvatica* Keng et S. L. Chen 相近,但植株低矮,高30~60 cm;叶片长3~10 cm,宽2~4 mm;颖无毛;外稃上部5脉明显,基盘光滑或微糙涩;内稃脊间无毛而明显不同。